Application No.: 10/091,769
Amendment Date: January 10, 2005
Reply to office action of September 14, 2004

Amendments to the Claims

Listing of Claims

This listing of the claims will replace all prior versions, and listings, of claims in the application.

CLAIMS

1. (Canceled)

2. (Canceled)

3. (Currently amended) A resource arbitration process as claimed in claim [[2]] 12, further comprising the step of applying statistical techniques to the correlated [[data]] demands to determine a mean demand for each agent of the plurality of agents.

4. (Currently amended) A resource arbitration process as claimed in claim [[2]], 12 further ~~comoprising~~ comprising the step of repeating the process of ~~determining the demand~~ performing experiments, correlating [[the]] demands and assigning resource arbitration.

5. (Canceled)

6. (Currently amended) A bus arbitration system as claimed in claim [[5]] 13, wherein said bus is a PCI bus and said bus agents are PCI agents.

7. (Currently amended) A bus arbitration system as claimed in claim [[5]] 13, said arbitration controller comprising a bus monitor ~~consisting of logic which monitors~~ configured to monitor

some or all [[of]] bus transactions for each bus agent of the plurality of bus agents; and programmable bus arbitration logic comprising priority assignment registers for each bus agent of the plurality of bus agents and logic configured to generate said grant control signals based on [[the]] data stored in said priority assignment registers.

8. (Currently amended) A bus arbitration system as claimed in claim 7, wherein said bus monitor ~~calculates~~ is configured to calculate the bus effective bandwidth for ~~each transaction~~ monitored transactions of each [[said]] bus agent of the plurality of bus agents, and ~~stores~~ configured to store the running average for each [[said]] bus agent of the plurality of bus agents in bandwidth registers.

9. (Currently amended) A bus arbitration system as claimed in claim 7, wherein said programmable bus arbitration logic decodes said priority assignment registers for each bus agent of the plurality of bus agents and assigns each bus agent of the plurality of bus agents a number of grant control signals based on [[the]] a value in [[its]] each bus agent's respective priority assignment register.

10. (Canceled)

11. (Currently amended) A resource arbitration process as claimed in claim [[10]] 14, further comprising the steps of:

correlating resource requirements for each agent over a specified period of time; and

statistically removing aberrations from said [[data]] resource requirements and determining a mean resource requirement for each agent.

12. (New) A resource arbitration process comprising the steps of:

fixing an arbitration for a plurality of agents sharing a resource;

performing experiments of skewing arbitration priority to particular agents, the experiments skewed from the fixed arbitration;

correlating demands for each agent of the plurality of agents for a predetermined duration; and

assigning resource arbitration priority to each agent of the plurality of agents based on the historical ratio of the demand for each agent of the plurality of agents over the sum of the demands of all agents, said historical ratio comprising demands of the experiments for each agent of the plurality of agents.

13. (New) A bus arbitration system, comprising:

a plurality of bus agents selectively coupled to a bus;

an arbitration controller adapted to monitor said bus used by each bus agent of the plurality of bus agents and adapted to generate grant control signals to each bus agent of the plurality of bus agents to couple the plurality of bus agents to said bus and adapted to perform the operations of:

fixing an arbitration for granting control signals for the plurality of bus agents sharing a resource;

performing experiments of skewing arbitration priority to particular bus agents, the experiments skewed from the fixed arbitration;

correlating monitored demands for each bus agent of the plurality of bus agents for a predetermined duration; and

assigning resource arbitration priority for granting control signals to each bus agent of the plurality of bus agents based on the historical ratio of the demand for each bus agent of the plurality of bus agents over the sum of the demands of all bus agents,

said historical ratio comprising demands of the experiments for each bus agent of the plurality of bus agents.

14. (New) A resource arbitration process comprising the steps of:

fixing an arbitration of each agent sharing a resource;

performing experiments of skewing arbitration priority to particular agents, the experiments skewed from the fixed arbitration, for a fixed interval;

monitoring resource usage of an agent having priority;

creating a table of resource requirements for each agent during said fixed interval; and

assigning resource priority to each agent based on said table of resource requirements.